

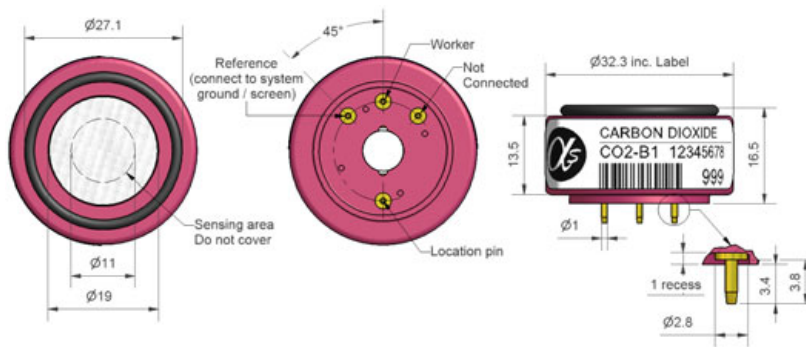
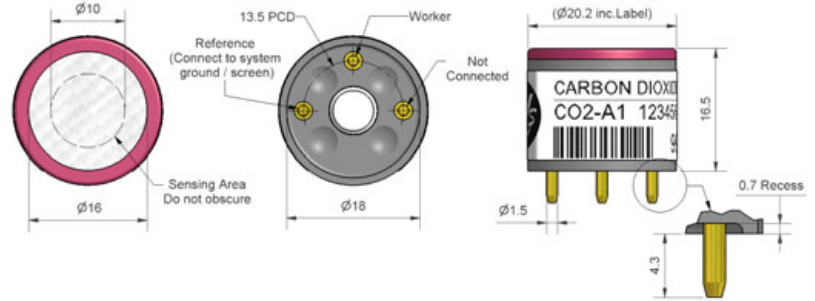
# Solid State Carbon Dioxide Sensor



PATENTED

Figure 1 CO<sub>2</sub> A & B Series Schematics

Our new carbon dioxide sensor, still being improved, is the first result of years of research into potentiometric gas sensors. Operating as a gas ion selective electrode (ISE), the sensor has an easy interface, and is supplied in industry standard



housings. Smaller housings, in our D Family size and as a 2025 button cell will become available.

This sensor is emerging from development, and is now ready for field trials. Specifications may change.

Table 1 CO<sub>2</sub> Specification

**PERFORMANCE**

Range	CO <sub>2</sub> concentration	100 ppm to >90 %
Response time	t90 (s) for mV change(20°C)	2-4 min
Linearity	See Figure 3	Logarithmic
Sensitivity	mV/decade concentration change (Nernstian slope)	10
Zero	E° @ 5000 ppm	-30 to +30 mV

**ENVIRONMENTAL**

Temperature dependence (10°C to 20°C) offset shift	+6 mV
Temperature dependence (20°C to 30°C) offset shift	-3 mV
Temperature range	°C (maybe extended)
Humidity range	% rh (continuous)
	10°C to 30°C
	15 to 80

- Room temperature operation
- Requires no power
- Small size
- Measures from 100ppm to >90% CO<sub>2</sub>
- Low cost

**Markets:**

- Combustion Analysis
- Safety
- Industrial Process Control

深圳市新世联科技有限公司

Technical Specification

## CO<sub>2</sub> Performance Data



Technical Specification

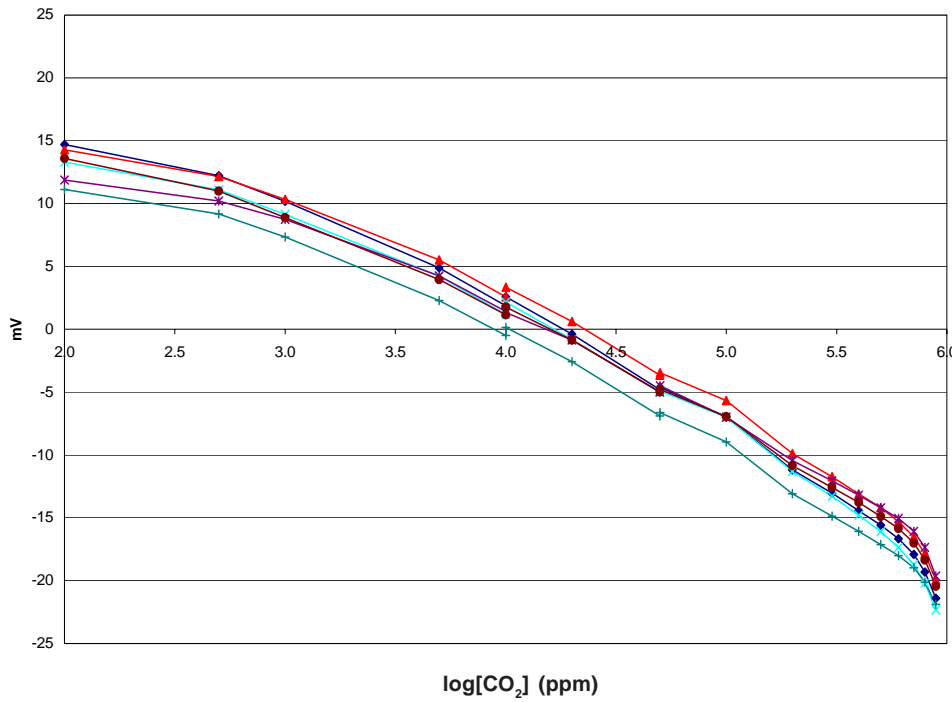


Figure 2

Since the sensors are potentiometric, they can operate over four decades of CO<sub>2</sub> concentration.

The sensitivity (mV/decade concentration) is best at higher concentrations.

Sensitivity remains stable with time, but the offset voltage will shift, so regular zeroing is advised.

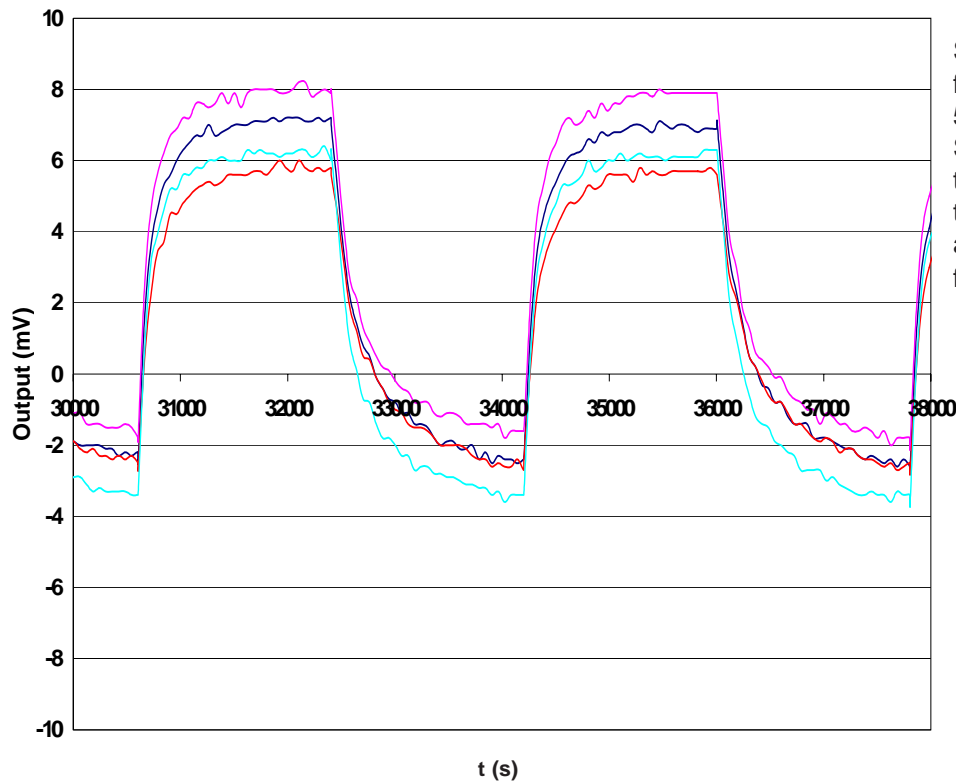


Figure 3

Sensors were exposed first to 5000 ppm CO<sub>2</sub> then 5% CO<sub>2</sub> for 30 minutes. Sensors return to the initial voltage with a fast initial response, followed by a slower stabilisation to the final voltage.

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